Exhibit A

ʼ092 Patent

Infringement Chart for US 10,154,092 vs. Amazon

Claim 13

Claim Language	Amazon Evidence
13. A method comprising:	Amazon AWS Storage gateway provide a method that NFS accesses to Amazon Simple Storage Server S3. Figure 1: Basic file gateway architecture

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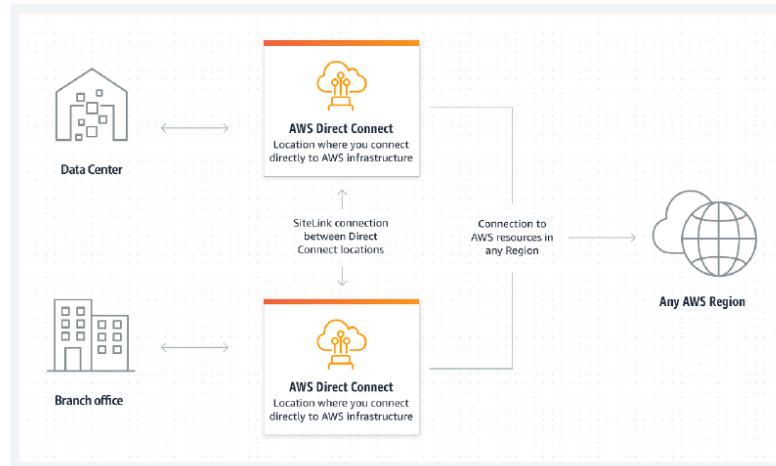|	
	Source: https://d1.awsstatic.com/whitepapers/Storage/aws-storage-gateway-file-gateway-for-hybrid-architectures.pdf Page 5,6 of 18
receiving input/output (I/O) traffic from a host device via a dedicated I/O channel at a first interface, the I/O traffic comprising a write command;	Amazon AWS Storage gateway input/output (I/O) traffic from a host device (on-premises) via a dedicated I/O channel (AWS Direct Connect)

| | How it works
Source: https://aws.amazon.com/storagegateway/
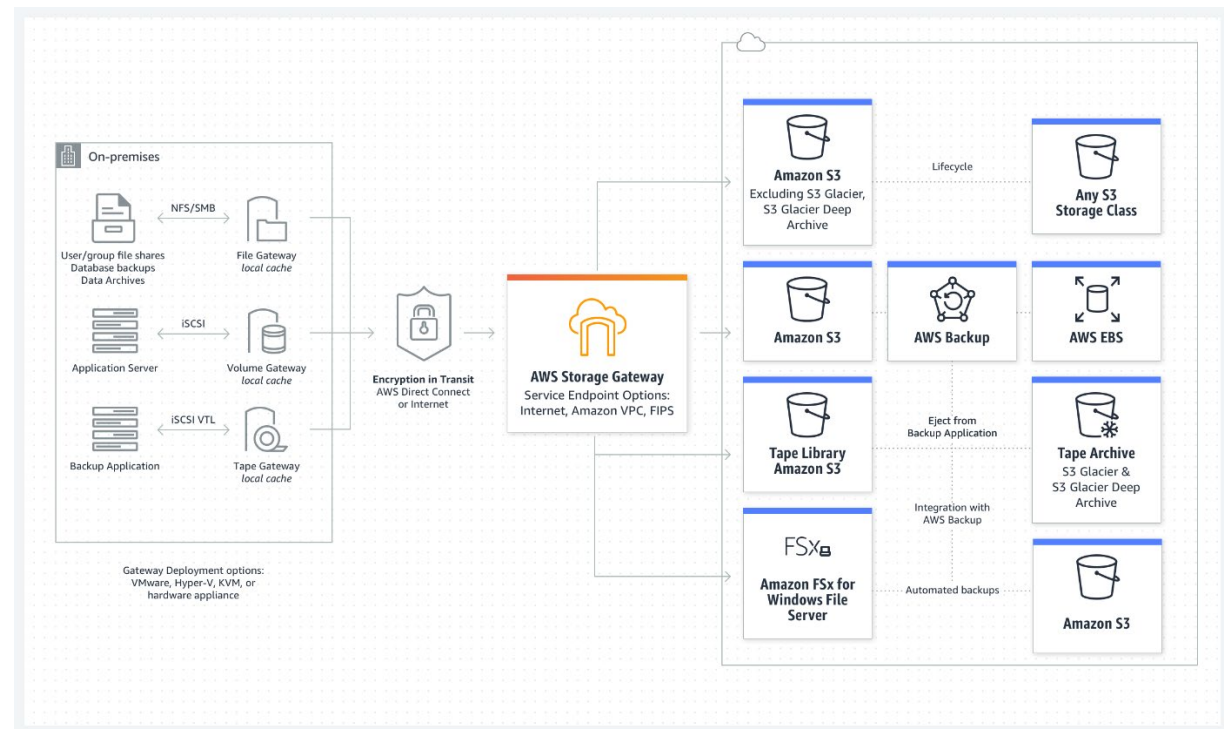
AWS Direct Connect is a dedicated I/O channel

How it works

The AWS Direct Connect cloud service is the shortest path to your AWS resources. While in transit, your network traffic remains on the AWS global network and never touches the public internet. This reduces the chance of hitting bottlenecks or unexpected increases in latency. When creating a new connection, you can choose a hosted connection provided by an AWS Direct Connect Delivery Partner, or choose a dedicated connection from AWS—and deploy at over 100 AWS Direct Connect locations around the globe. With AWS Direct Connect SiteLink, you can send data between AWS Direct Connect locations to create private network connections between the offices and data centers in your global network.

Data Center   AWS Direct Connect — Location where you connect directly to AWS infrastructure

SiteLink connection between Direct Connect locations

Connection to AWS resources in any Region

Any AWS Region

Branch office   AWS Direct Connect — Location where you connect directly to AWS infrastructure |

Dedicated Interconnect overview
Source: https://cloud.google.com/storage-transfer/docs/on-prem-overview

the I/O traffic comprising a write command;

Write Operations (Write-Back Cache)

When a file is written to the file gateway over NFS, the gateway first commits the write to the local cache. At that point, it acknowledges the write success to the NFS client, which enables low latency on writes. After the write cache is populated, the file is put into the associated Amazon S3 bucket asynchronously to increase local performance of Internet transfers.
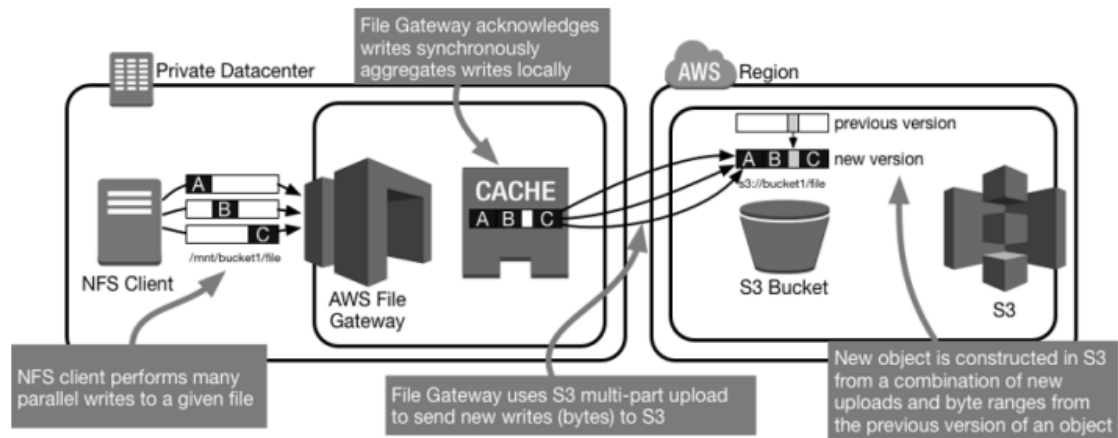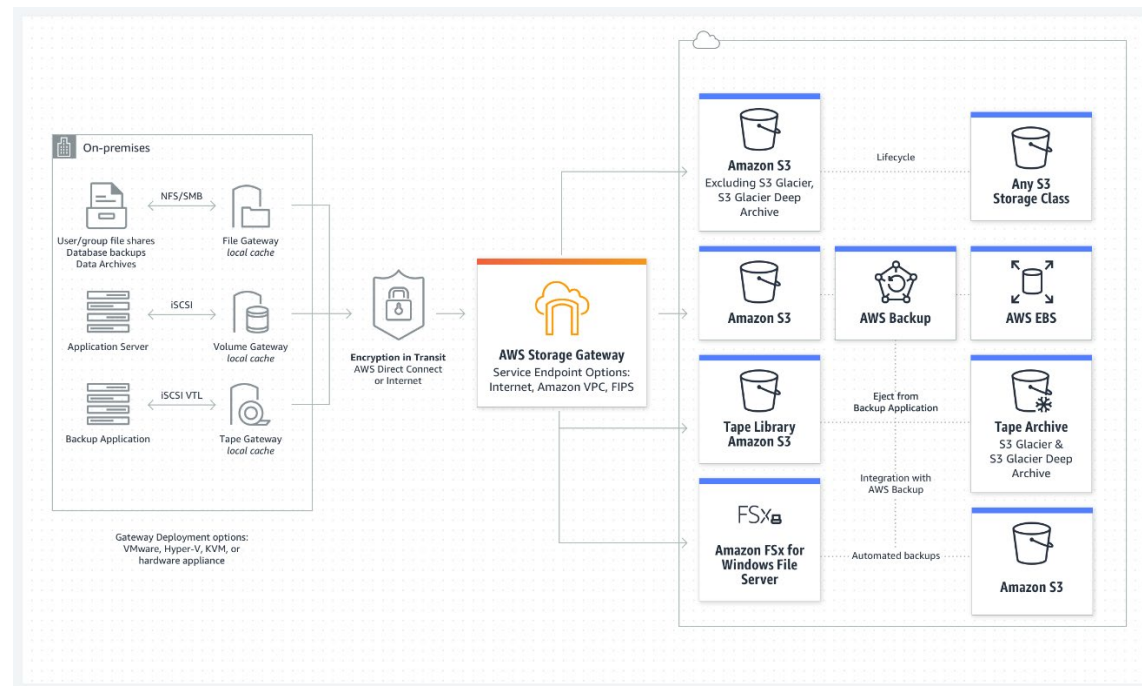

Figure 4: File gateway write operations

Source: https://d1.awsstatic.com/whitepapers/Storage/aws-storage-gateway-file-gateway-for-hybrid-architectures.pdf   Page 9 of 18

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receiving first data via a network at a second interface;	Amazon AWS Storage gateway receive first data via a network How it works Source: https://aws.amazon.com/storagegateway/

	Q: What is file gateway? A: File gateway presents a file-based interface to Amazon S3, which appears as a network file share. It enables you to store and retrieve Amazon S3 objects through standard file storage protocols. File gateway allows your existing file-based applications or devices to use secure and durable cloud storage without needing to be modified. With file gateway, your configured S3 buckets will be available as Network File System (NFS) mount points or Server Message Block (SMB) file shares. Your applications read and write files and directories over NFS or SMB, interfacing to the gateway as a file server. In turn, the gateway translates these file operations into object requests on your S3 buckets. Your most recently used data is cached on the gateway for low-latency access, and data transfer between your data center and AWS is fully managed and optimized by the gateway. Once in S3, you can access the objects directly or manage them using features such as S3 Lifecycle Policies, object versioning, and cross-region replication. You can run file gateway on-premises or in EC2. Source: https://aws.amazon.com/storagegateway/faqs/
storing second data at a cache memory; storing third data at a storage device;	Gateway first commit the data (Storing second data) at local cache (Cache memory) and store the newly written data (third data) at amazon S3 bucket (storage device).

Write Operations (Write-Back Cache)

When a file is written to the file gateway over NFS, the gateway first commits the write to the local cache. At that point, it acknowledges the write success to the NFS client, which enables low latency on writes. After the write cache is populated, the file is put into the associated Amazon S3 bucket asynchronously to increase local performance of Internet transfers.

When an existing file is modified, the file gateway transfers only the newly written bytes to the associated Amazon S3 bucket. This uses Amazon S3 API calls to construct a new object from a previous version in combination with the newly uploaded bytes. This feature reduces the amount of data that is required to be transferred when NFS clients modify existing files within the file gateway.
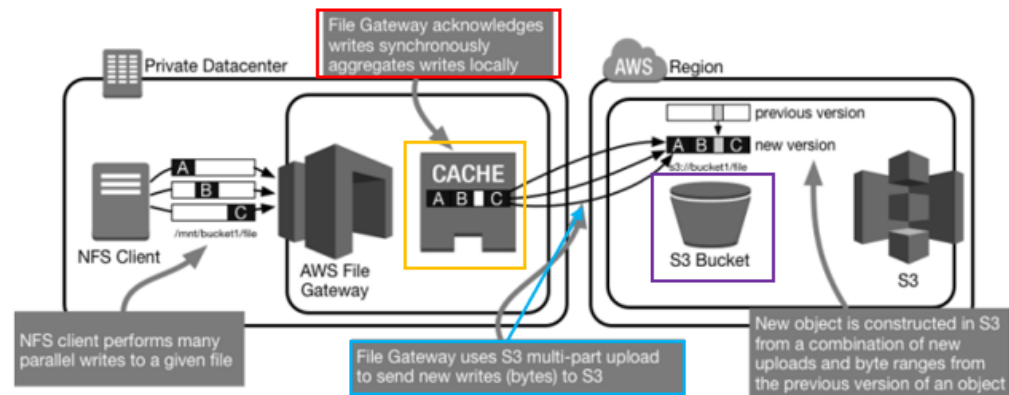

Figure 4: File gateway write operations

Source:https://d1.awsstatic.com/whitepapers/Storage/aws-storage-gateway-file-gateway-for-hybrid-architectures.pdf Page 9 of 18

accessing the cache memory during	Whenever a write/read operation is performed (processing of I/O traffic), the gateway access the local cache (accessing the cache memory).

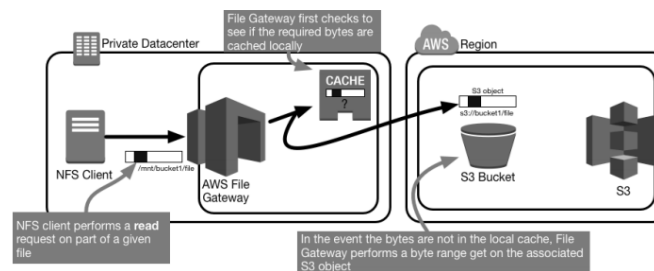| processing of the I/O traffic; and	A: Local disk storage on the gateway is used to temporarily hold changed data that needs to be transferred to AWS, and to locally cache data for low-latency read access. File gateway automatically manages the cache maintaining the most recently accessed data based on client read and write operations. Data is evicted from the cache only when space is needed to store more recently used data.
	Source: https://aws.amazon.com/storagegateway/faqs/
	Read Operations (Read-Through Cache)
	When an NFS client performs a read request, the file gateway first checks the local cache for the requested data. If the data is not in the cache, the gateway retrieves the data from Amazon S3 using Range GET requests to minimize data transferred over the Internet while repopulating the read cache on behalf of the client.
	Figure 3: File gateway read operations
	Source: https://d1.awsstatic.com/whitepapers/Storage/aws-storage-gateway-file-gateway-for-hybrid-architectures.pdf Page 8 of 18

Write Operations (Write-Back Cache)

When a file is written to the file gateway over NFS, the gateway first commits the write to the local cache. At that point, it acknowledges the write success to the NFS client, which enables low latency on writes. After the write cache is populated, the file is put into the associated Amazon S3 bucket asynchronously to increase local performance of Internet transfers.
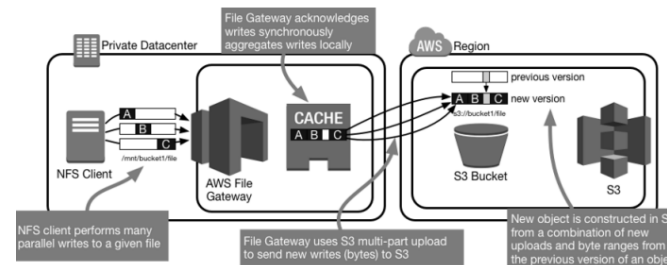
Figure 4: File gateway write operations

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| performing one or more access operations at the storage device based on the I/O traffic, the one or more access operations utilizing a communication path between a processor and the storage device, the communication path | Object stored at S3 (Storage device) can be accessed directly (**Access operation**) in AWS (**processor**) using Amazon S3 API calls (**Communication path**). The Read/write request from the NFS client to gateway communicated over NFS (**I/O channel**). |

Q: Can I directly access objects stored in S3 by using file gateway?

A: Yes. Once objects are stored in S3, you can access them directly in AWS for in-cloud workloads without requiring file gateway. Your objects inherit the properties of the S3 bucket in which they are stored, such as lifecycle management, and cross-region replication.

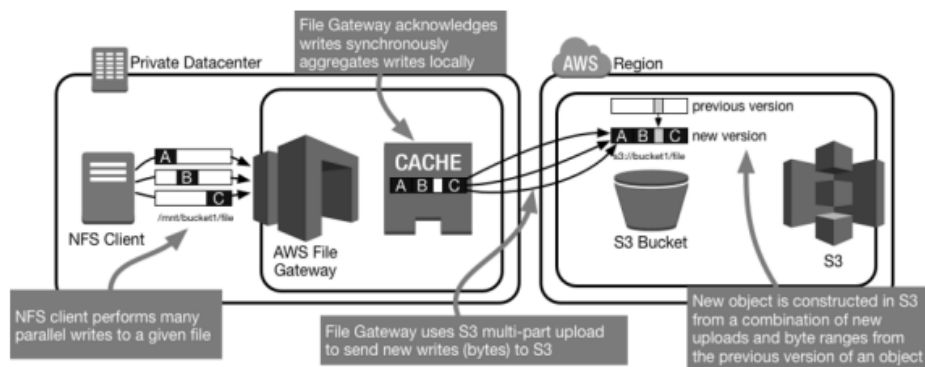|	
distinct from the dedicated I/O channel.	Source: https://aws.amazon.com/storagegateway/faqs/ **Write Operations (Write-Back Cache)** When a file is written to the file gateway over NFS, the gateway first commits the write to the local cache. At that point, it acknowledges the write success to the NFS client, which enables low latency on writes. After the write cache is populated, the file is put into the associated Amazon S3 bucket asynchronously to increase local performance of Internet transfers. When an existing file is modified, the file gateway transfers only the newly written bytes to the associated Amazon S3 bucket. This uses Amazon S3 API calls to construct a new object from a previous version in combination with the newly uploaded bytes. This feature reduces the amount of data that is required to be transferred when NFS clients modify existing files within the file gateway. Figure 4: File gateway write operations Source:https://d1.awsstatic.com/whitepapers/Storage/aws-storage-gateway-file-gateway-for-hybrid-architectures.pdf Page 9 of 18